# HIGH-RISE SPECIAL REQUIREMENTS

**GENERAL/ASSEMBLY CORRECTION LIST MUST BE USED IN CONJUCTION WITH THIS LIST**

**Plans have been reviewed for compliance with the following:**

a. International Building Code (excluding Chapters 11 and 27), 2006 edition.
b. International Fire Code, 2006 edition.
c. International Mechanical Code, 2006 edition.
d. NFPA 70 National Electrical Code, 2008 edition.
e. For public buildings: Tennessee Public Building Accessibility Act, 2010 ADA Standards For Accessible Design.

[ a.,b.,c. Rule 0780-02-02-.01 ] [ d. Rule 0780-02-01-.02 ] [ e. T.C.A 68-120-204 ]

Correction lists are not all inclusive. See additional comments on the cover sheet.

**Please Note:** Items listed require correction by revised plans, addenda, field orders, or change orders before plans are approved for construction. Answers in letter form are *not* acceptable. **Starting construction before plans approval may be considered as just cause by the State to issue a stop work order.** [ Rule 0780-02-03-.02(1) ]

## *General*

1. High-rise buildings must be protected throughout by an electrically supervised, approved, automatic sprinkler system in accordance with IBC 903.3.1.1. A sprinkler control valve and water flow device shall be provided for each floor. [IBC 403.2]

2. Provide a Class I standpipe. [IBC 905.3]

3. In applicable seismic zones, the anchorage of the following mechanical and electrical equipment must be designed for a lateral force based on IBC Chapter 16:

   A. Elevator drive and suspension systems.

   B. Stand-by power and lighting facilities.

   C. Fire pumps and other fire protection equipment.

4. Provide a letter from the local Fire Chief approving the location of the Fire Command Center. [IBC 403.8]

## *Means of Egress*

1. Required exit stairs must be constructed as smoke proof enclosures [IBC 403.13] or pressurized in compliance with [IBC Section 909]

2. Smoke proof enclosure must be by either natural ventilation (IBC 909.20.3) or by mechanical ventilation (IBC 909.20.4).

3. Doors from the building to the smoke proof enclosure's vestibule must be 1 ½-hour fire rated. [IBC 1020.1.7]

4. Doors from the smoke proof enclosure's vestibule to the stairway must be not less than 20-minute fire rated. [IBC 909.20.4.1 and 909.20.3.2]

5. Stairway doors, which can be locked, must be provided with automatic electrical unlocking from the central station. Telephones or other two-way communication systems must be provided at not less than every fifth floor inside the stairwell. [IBC 403.12 and 403.12.1]

6. One stair must extend to the roof and must be marked at street and floor levels with a sign indicating that it continues to the roof. [IBC 1009.11]

7. Provide a sign at each floor level landing five feet above the landing that is visible when the door is opened or closed. The sign must indicate the floor level, the terminus of the top and bottom of the stair enclosure, and the identification of the stair. [IBC 1020.1.6 and 1007.8.3]

## *Mechanical*

1. A smoke detector must be provided in the main return and exhaust air plenum of each HVAC system greater than 2000 cfm, located in a serviceable area downstream of the last duct inlet. [IBC 907.2.12.1 (2)]

2. A smoke detector must be provided at each connection to a vertical duct or riser serving two or more stories from return air ducts or plenums or heating, ventilating and air conditioning systems. [IBC 907.2.12.1 (3)]

3. A smoke detector must be provided in each mechanical, electrical, transformer, telephone equipment or other similar rooms unless they are sprinklered. [IBC 907.2.12.1 (1)]

4. Natural or mechanical ventilation for the removal of products of combustion must be provided in every story and must consist of one of the options given in IBC 909.20.4.

5. Stair pressurization systems must be independent of other building ventilation systems. [IBC Section 909.20.6]

6. Flexible air-duct connectors must be installed in accordance with manufacturer's instructions (maximum 14 feet in length and not permitted to pass through any wall, shafts, etc., that requires one hour fire resistance. [IMC 603.6]

## *Fire Suppression*

1. Provide shutoff valves and water flow devices at the riser connection on each floor. [IBC 903.4.3] Combined sprinkler/standpipe systems must have an individual control valve and check valve at each sprinkler connection. [NFPA 14 6.2.5.1]

2. A secondary on-site water supply equal to the hydraulically calculated sprinkler demand, including the hose stream requirement, shall be provided for high rise buildings in Seismic Design Category C, D, E or F as determined by this code. The secondary water supply shall have a duration of not less than 30 minutes as determined by the occupancy hazard classification in accordance with NFPA 13 (See exceptions). [IBC 903.3.5.2]

3. Automatic fire sprinklers may be omitted in the spaces or areas of open parking garages in accordance with IBC Section 406.3 and in telecommunications equipment rooms (See exceptions). [IBC 403.2]

## *Electrical*

1. Provide a permanently installed standby power generation system conforming to 2002 NFPA 70. [IBC 403.10]

2. The following standby power loads must be connected to the emergency generator and must be operational within 60 seconds [IBC 403.10.2]:

   A. Rescue elevator required by IBC 3002.4 and IBC 3003.

   B. Emergency mechanical air handling systems (i.e., smoke proof enclosures and smoke management systems).

   C. Electrically powered Fire pumps.

   D. Lighting and Power for the Fire Command Center

3. A Fire Command Center complying with IBC Section 911.1 shall be provided in a location approved by the fire department and shall contain the following features:

   A. The emergency voice/alarm communication system unit.

   B. The fire department communications unit.

   C. Fire detection and alarm system annunciator unit.

   D. Elevator floor location and operation annunciator.

   E. Sprinkler valve and water flow display panels.

   F. Emergency generator supervision devices, manual start and transfer features.

   G. Controls for unlocking stairway doors simultaneously.

   H. Telephone for fire department use with controlled access to the public telephone system.

   I. Fire pump status indicators.

   J. Status indicators and controls for air-handling systems.

   K. The fire fighters control panel required by IBC Section 909.16 for smoke control systems.

   L. Emergency power and standby power status indicators.

   M. Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire protection systems, fire-fighting equipment and fire department access.

   N. Worktable.

   O. Public address system, where specifically required by other sections of this code.

4. Emergency power must be available within 10 seconds to operate the following (IBC 403.11.1):

   A. Emergency voice/alarm communication systems.

   B. Fire alarm systems.

   C. Automatic fire detection systems.

   D. Elevator car lighting.

   E. Escape route lighting.

   F. Exit sign illumination.

5. An emergency voice/alarm communication system, which is also allowed to serve as a public address system, shall be installed in accordance with IBC 907.2.12.2and 403.6.

6. The voice alarm system must provide a predetermined message to the area where the alarm originated, actuated by a smoke detector, sprinkler head, water flow device, or manual fire alarm. The message must provide applicable information and directions to occupants. [IBC 907.2.12.2]

7. The fire department two-way communication system must operate between the central control station and every elevator, elevator lobby, exit stairway, and exit access corridor. In buildings equipped with a fire pump(s), a telephone station or jack shall be provided in each fire pump room. [IBC 403.7 and 907.2.12.3]

8. At least one approved smoke detector shall be installed in every mechanical equipment, electrical, transformer, telephone equipment, elevator machine, and elevator lobby. [IBC 403.5 and 907.2.12.1]